

What is claimed is:

1. An image forming device for forming images on sheets, the image forming device comprising:

a main body and a sheet-supply cassette attachable to and detachable from the main body,

the sheet-supply cassette including:

a guide that guides edges of sheets housed in the sheet-supply cassette, the guide being movable to change position in accordance with size of housed sheets;

a cam abutment portion that moves to a position that corresponds to the position of the guide;

a cam with a cam surface, the cam movable so that the cam surface selectively moves toward and away from the cam abutment portion, the cam moving to a separated position, wherein the cam surface is separated from the cam abutment portion, when the sheet-supply cassette is detached from the main body;

and

a detected portion that moves in a linked manner with the cam; and

the main body including:

a cam mover that, when the sheet-supply cassette is attached to the main body, moves the

cam until the cam surface of the cam abuts the cam abutment portion; and

a detection portion that detects the detected portion moved in a linked manner with the cam;

5 wherein the cam surface has a shape that varies movement amount of the cam into abutment with the abutment portion by the cam mover in accordance with the position of the guide.

10 2. An image forming device as claimed in claim 1, wherein the sheet-supply cassette further includes a cam urger that urges the cam into the separated position, the cam mover abutting the cam against the cam abutment portion against resistance from the cam urger.

15 3. An image forming device as claimed in claim 1, further comprising an absorber that absorbs excess force from the cam mover beyond movement required to abut the cam against the cam abutment portion.

20 4. An image forming device as claimed in claim 3, wherein the detected portion includes an engagement portion that is exposed from an outer wall of the sheet-supply cassette, the engagement portion engaging with the cam mover when the sheet-supply cassette is attached to the main body.

25 5. An image forming device as claimed in claim 1, wherein the detected portion moves linearly following a movement direction in which the sheet-supply cassette moves

when the sheet-supply cassette is being attached to and detached from the main body.

6. An image forming device as claimed in claim 1, wherein the detected portion includes an engagement portion that is exposed from an outer wall of the sheet-supply cassette, the engagement portion engaging with the cam mover when the sheet-supply cassette is attached to the main body.

7. An image forming device as claimed in claim 1, wherein:

the detected portion is formed with a plurality of protrusions aligned in a movement direction of the sheet-supply cassette when the sheet-supply cassette is being attached to and detached from the main body, the plurality of protrusions being formed in patterns that differ depending on position in the movement direction; and

the detection portion includes a plurality of switches that turn selectively on and off in accordance with presence and absence of the protrusions, the detection portion detecting movement amount of the detected portion based on on/off pattern of the switches.

8. An image forming device as claimed in claim 1, wherein:

the sheet-supply cassette further includes a cassette body having at least a base and a pair of side walls extending from the base, the detected portion being provided

on at least one of the side walls, the detected portion indicating at least one of information relating to sheets housed in the cassette body and information relating the cassette body;

5 the detection portion has:

a pressing portion that, when the sheet-supply cassette is mounted in the main body, presses the detected portion against the at least one side wall in a direction perpendicular to direction in which the side wall extends from the base; and

10 an information detection portion that receives repulsive force from the pressing portion pressing against the detected portion and that detects the information indicated by the detected portion based on the repulsive force; and

15 the main body further includes a side wall support that supports the at least one side wall from bending under pressing force of the pressing portion against the detected portion.

20 9. An image forming device for forming images on sheets, the image forming device comprising:

a main body and a sheet-supply cassette attachable to and detachable from the main body,

the sheet-supply cassette including:

25 a guide that guides edges of sheets housed in

the sheet-supply cassette, the guide being movable to change position in accordance with size of housed sheets;

a guide cam that changes position integrally with the guide, the guide cam having a cam surface;

a guide cam abutment portion movable selectively toward and away from the guide cam, the guide cam abutment portion moving to a separated position separated from the guide cam when the sheet-supply cassette is detached from the main body; and

a detected portion that moves in a linked manner with the guide cam abutment portion; and the main body including:

an abutment portion mover that, when the sheet-supply cassette is attached to the main body, moves the guide cam abutment portion until the guide cam abutment portion abuts the cam surface of the guide cam; and

a detection portion that detects the detected portion moved in a linked manner with the guide cam abutment portion;

wherein the cam surface of the guide cam has a shape that varies movement amount of guide cam abutment portion into abutment with the cam surface by the abutment portion mover in accordance with the position of the guide.

10. An image forming device as claimed in claim 9,
wherein the sheet-supply cassette further includes an
abutment portion urging means that urges the guide cam
abutment portion into the separated position, the abutment
portion mover moving the guide cam abutment portion into
abutment with the cam surface against urging force of the
abutment portion urging means.

11. An image forming device as claimed in claim 9,
further comprising an absorber that absorbs excess force
from the cam mover beyond movement required to abut the cam
against the cam abutment portion

12. An image forming device as claimed in claim 11,
wherein the detected portion includes an engagement portion
that is exposed from an outer wall of the sheet-supply
cassette, the engagement portion engaging with the abutment
portion mover when the sheet-supply cassette is attached to
the main body.

13. An image forming device as claimed in claim 9,
wherein the detected portion moves linearly following a
movement direction in which the sheet-supply cassette moves
when the sheet-supply cassette is being attached to and
detached from the main body.

14. An image forming device as claimed in claim 9,
wherein the detected portion includes an engagement portion
that is exposed from an outer wall of the sheet-supply

cassette, the engagement portion engaging with the abutment portion mover when the sheet-supply cassette is attached to the main body.

15. An image forming device as claimed in claim 9,
5 wherein:

the detected portion is formed with a plurality of protrusions aligned in a movement direction in which the sheet-supply cassette moves when the sheet-supply cassette is being attached to and detached from the main body, the plurality of protrusions being formed in patterns that differ depending on position in the movement direction; and

10 the detection portion includes a plurality of switches that turn selectively on and off in accordance with presence and absence of the protrusions, the detection portion detecting movement amount of the detected portion based on on/off pattern of the switches.

15 16. An image forming device as claimed in claim 9, wherein:

20 the sheet-supply cassette further includes a cassette body having at least a base and a pair of side walls extending from the base, the detected portion being provided on at least one of the side walls, the detected portion indicating at least one of information relating to sheets housed in the cassette body and information relating the
25 cassette body;

the detection portion has:

a pressing portion that, when the sheet-supply cassette is mounted in the main body, presses the detected portion against the at least one side wall in a direction perpendicular to direction in which the side wall extends from the base; and

an information detection portion that receives repulsive force from the pressing portion pressing against the detected portion and that detects the information indicated by the detected portion based on the repulsive force; and

the main body further includes a side wall support that supports the at least one side wall from bending under pressing force of the pressing portion against the detected portion.

17. A sheet-supply device for supplying sheets, the sheet-supply device comprising:

a main body and a sheet-supply cassette attachable to and detachable from the main body,

the sheet-supply cassette including:

a guide that guides edges of sheets housed in the sheet-supply cassette, the guide being movable to change position in accordance with size of housed sheets;

a cam abutment portion that moves to a

position that corresponds to the position of the guide;

5 a cam with a cam surface, the cam movable so that the cam surface selectively moves toward and away from the cam abutment portion, the cam moving to a separated position, wherein the cam surface is separated from the cam abutment portion, when the sheet-supply cassette is detached from the main body; and

10 a detected portion that moves in a linked manner with the cam; and
the main body including:

15 a cam mover that, when the sheet-supply cassette is attached to the main body, moves the cam until the cam surface of the cam abuts the cam abutment portion; and

a detection portion that detects the detected portion moved in a linked manner with the cam;

20 wherein the cam surface has a shape that varies movement amount of the cam into abutment with the abutment portion by the cam mover in accordance with the position of the guide.

25 18. A sheet-supply device as claimed in claim 17, wherein the sheet-supply cassette further includes a cam urger that urges the cam into the separated position, the

cam mover abutting the cam against the cam abutment portion against resistance from the cam urger.

19. A sheet-supply device as claimed in claim 17, further comprising an absorber that absorbs excess force from the cam mover beyond movement required to abut the cam against the cam abutment portion

20. A sheet-supply device as claimed in claim 19, wherein the detected portion includes an engagement portion that is exposed from an outer wall of the sheet-supply cassette, the engagement portion engaging with the cam mover when the sheet-supply cassette is attached to the main body.

21. A sheet-supply device as claimed in claim 17, wherein the detected portion moves linearly following a movement direction in which the sheet-supply cassette moves when the sheet-supply cassette is being attached to and detached from the main body.

22. A sheet-supply device as claimed in claim 17, wherein the detected portion includes an engagement portion that is exposed from an outer wall of the sheet-supply cassette, the engagement portion engaging with the cam mover when the sheet-supply cassette is attached to the main body.

23. A sheet-supply device as claimed in claim 17, wherein:

the detected portion is formed with a plurality of protrusions aligned in a movement direction of the sheet-

supply cassette when the sheet-supply cassette is being attached to and detached from the main body, the plurality of protrusions being formed in patterns that differ depending on position in the movement direction; and

5 the detection portion includes a plurality of switches that turn selectively on and off in accordance with presence and absence of the protrusions, the detection portion detecting movement amount of the detected portion based on on/off pattern of the switches.

10 24. A sheet-supply device as claimed in claim 17, further comprising: .

 a sheet-supply unit for supplying sheets out from the sheet-supply cassette; and

15 an image forming unit for forming images on the sheets supplied by the sheet-supply unit.

 25. As sheet supply device as claimed in claim 17, wherein:

20 the sheet-supply cassette further includes a cassette body having at least a base and a pair of side walls extending from the base, the detected portion being provided on at least one of the side walls, the detected portion indicating at least one of information relating to sheets housed in the cassette body and information relating the cassette body;

25 the detection portion has:

5 a pressing portion that, when the sheet-supply cassette is mounted in the main body, presses the detected portion against the at least one side wall in a direction perpendicular to direction in which the side wall extends from the base; and

10 an information detection portion that receives repulsive force from the pressing portion pressing against the detected portion and that detects the information indicated by the detected portion based on the repulsive force; and

the main body further includes a side wall support that supports the at least one side wall from bending under pressing force of the pressing portion against the detected portion.

15 26. A sheet-supply device for supplying sheets, the sheet-supply device comprising:

a main body and a sheet-supply cassette attachable to and detachable from the main body,

the sheet-supply cassette including:

20 a guide that guides edges of sheets housed in the sheet-supply cassette, the guide being movable to change position in accordance with size of housed sheets;

25 a guide cam that changes position integrally with the guide, the guide cam having a cam surface;

a guide cam abutment portion movable selectively toward and away from the guide cam, the guide cam abutment portion moving to a separated position separated from the guide cam when the sheet-supply cassette is detached from the main body; and

a detected portion that moves in a linked manner with the guide cam abutment portion; and the main body including:

an abutment portion mover that, when the sheet-supply cassette is attached to the main body, moves the guide cam abutment portion until the guide cam abutment portion abuts the cam surface of the guide cam; and

a detection portion that detects the detected portion moved in a linked manner with the guide cam abutment portion;

wherein the cam surface of the guide cam has a shape that varies movement amount of guide cam abutment portion into abutment with the cam surface by the abutment portion mover in accordance with the position of the guide.

27. A sheet-supply device as claimed in claim 26, wherein the sheet-supply cassette further includes an abutment portion urging means that urges the guide cam abutment portion into the separated position, the abutment portion mover moving the guide cam abutment portion into

abutment with the cam surface against urging force of the
abutment portion urging means.

28. A sheet-supply device as claimed in claim 26,
wherein the abutment portion mover includes an absorber that
is movably provided on the main body to absorb guide-
position-dependent differences in relative movement amount
between the guide cam and the guide cam abutment portion.

29. A sheet-supply device as claimed in claim 28,
wherein the detected portion includes an engagement portion
that is exposed from an outer wall of the sheet-supply
cassette, the engagement portion engaging with the abutment
portion mover when the sheet-supply cassette is attached to
the main body.

30. A sheet-supply device as claimed in claim 26,
wherein the detected portion moves linearly following a
movement direction in which the sheet-supply cassette moves
when the sheet-supply cassette is being attached to and
detached from the main body.

31. A sheet-supply device as claimed in claim 26,
wherein the detected portion includes an engagement portion
that is exposed from an outer wall of the sheet-supply
cassette, the engagement portion engaging with the abutment
portion mover when the sheet-supply cassette is attached to
the main body.

32. A sheet-supply device as claimed in claim 26,

wherein:

the detected portion is formed with a plurality of protrusions aligned in a movement direction in which the sheet-supply cassette moves when the sheet-supply cassette is being attached to and detached from the main body, the plurality of protrusions being formed in patterns that differ depending on position in the movement direction; and

the detection portion includes a plurality of switches that turn selectively on and off in accordance with presence and absence of the protrusions, the detection portion detecting movement amount of the detected portion based on on/off pattern of the switches.

33. A sheet-supply device as claimed in claim 26, further comprising:

a sheet-supply unit for supplying sheets out from the sheet-supply cassette; and

an image forming unit for forming images on the sheets supplied by the sheet-supply unit.

34. A sheet-supply device as claimed in claim 26, wherein:

the sheet-supply cassette further includes a cassette body having at least a base and a pair of side walls extending from the base, the detected portion being provided on at least one of the side walls, the detected portion indicating at least one of information relating to sheets

housed in the cassette body and information relating the cassette body;

the detection portion has:

5 a pressing portion that, when the sheet-supply cassette is mounted in the main body, presses the detected portion against the at least one side wall in a direction perpendicular to direction in which the side wall extends from the base; and

10 an information detection portion that receives repulsive force from the pressing portion pressing against the detected portion and that detects the information indicated by the detected portion based on the repulsive force; and

15 the main body further includes a side wall support that supports the at least one side wall from bending under pressing force of the pressing portion against the detected portion.

35. An image forming device for forming images on sheets, the image forming device comprising:

20 a main body and a sheet-supply cassette attachable to and detachable from the main body,

the sheet-supply cassette including:

a cassette body having at least a base and a pair of side walls extending from the base; and

25 a detected portion provided on at least one of

the side walls, the detected portion indicating at least one of information relating to sheets housed in the cassette body and information relating the cassette body; and

the main body including:

a pressing portion that, when the sheet-supply cassette is mounted in the main body, presses the detected portion against the at least one side wall in a direction perpendicular to direction in which the side wall extends from the base;

an information detection portion that receives repulsive force from the pressing portion pressing against the detected portion and that detects the information indicated by the detected portion based on the repulsive force; and

a side wall support that supports the at least one side wall from bending under pressing force of the pressing portion against the detected portion.

36. An image forming device as claimed in claim 35, wherein the information relating to sheets is information indicating size of sheets housed in the sheet-supply cassette.

37. An image forming device as claimed in claim 35, wherein the information relating to the cassette body is information for distinguishing the cassette body from other

cassette bodies of other sheet-supply cassettes.

38. An image forming device as claimed in claim 35, wherein the detected portion is provided in a plurality that depends on information to be indicated, the pressing portion being provided in a plurality that corresponds to the plurality of detected portions.

39. An image forming device as claimed in claim 35, wherein the side wall support supports the at least one side wall from a side of the at least one side wall that is opposite from the base with respect to the detected portion.

40. An image forming device as claimed in claim 35, wherein the base and the pair of side walls define an opening at a front of the cassette body with respect to mounting direction of the cassette body into the main body, a switching plate being further provided separately from the cassette body, the switching plate being switchably movable between a closing-off position and an expansion position, the switching plate closing off the front opening when in the closing-off position, the switching plate expanding the holding space of the cassette body when in the expansion position to enable the cassette body to house larger sheets than when the switching plate is in the closing-off position.

41. An image forming device as claimed in claim 35, wherein the side wall support supports the at least one side wall from a side opposite from the base with respect to the

detected portion and at a rear side of the at least one side wall provided with the detected portion.

42. A sheet-supply device for supplying sheets to an image forming device, the sheet-supply device comprising:

5 a main body and a sheet-supply cassette attachable to and detachable from the main body,

the sheet-supply cassette including:

a cassette body having at least a base and a pair of side walls extending from the base; and

10 a detected portion provided on at least one of the side walls, the detected portion indicating at least one of information relating to sheets housed in the cassette body and information relating the cassette body; and

15 the main body including:

a pressing portion that, when the sheet-supply cassette is mounted in the main body, presses the detected portion against the at least one side wall in a direction perpendicular to direction in which the side wall extends from the base;

20 an information detection portion that receives repulsive force from the pressing portion pressing against the detected portion and that detects the information indicated by the detected portion based on the repulsive force; and

25

a side wall support that supports the at least one side wall from bending under pressing force of the pressing portion against the detected portion.

43. A sheet-supply device as claimed in claim 42,
5 wherein the information relating to sheets is information indicating size of sheets housed in the sheet-supply cassette.

44. A sheet-supply device as claimed in claim 42,
10 wherein the information relating to the cassette body is information for distinguishing the cassette body from other cassette bodies of other sheet-supply cassettes.

45. A sheet-supply device as claimed in claim 42,
15 wherein the detected portion is provided in a plurality that depends on information to be indicated, the pressing portion being provided in a plurality that corresponds to the plurality of detected portions.

46. A sheet-supply device as claimed in claim 42,
20 wherein the side wall support supports the at least one side wall from a side of the at least one side wall that is opposite from the base with respect to the detected portion.

47. A sheet-supply device as claimed in claim 42,
25 wherein the base and the pair of side walls define an opening at a front of the cassette body with respect to mounting direction of the cassette body into the main body, a switching plate being further provided separately from the

cassette body, the switching plate being switchably movable between a closing-off position and an expansion position, the switching plate closing off the front opening when in the closing-off position, the switching plate expanding the holding space of the cassette body when in the expansion position to enable the cassette body to house larger sheets than when the switching plate is in the closing-off position.

48. A sheet-supply device as claimed in claim 42, wherein the side wall support supports the at least one side wall from a side opposite from the base with respect to the detected portion and at a rear side of the at least one side wall provided with the detected portion.

49. A sheet-supply cassette used mounted in a sheet-supply device including a side wall supporter, the sheet-supply cassette comprising:

a cassette body having at least a base and a pair of side walls extending from the base, the base and the pair of side walls defining an opening at a front of the cassette body with respect to a mounting direction of the cassette body into the sheet-supply device;

a detected portion provided on at least one of the side walls, the detected portion indicating, in a manner adapted for detection by the sheet-supply device, at least one of information relating to sheets housed in the cassette body and information relating the cassette body; and

a switching plate provided separately from the cassette body, the switching plate being switchably movable between a closing-off position and an expansion position, the switching plate closing off the front opening when in the closing-off position, the switching plate expanding the holding space of the cassette body when in the expansion position to enable the cassette body to house larger sheets than when the switching plate is in the closing-off position,

wherein a free side of the at least one side is provided with a supported portion that contacts and is supported by the side wall supporter when the sheet-supply cassette is mounted in the sheet-supply device, the supported portion extending further from the base than a portion of the switching plate that is positioned near the supported portion.

50. A sheet-supply cassette adapted for insertion into a sheet-supply device body, the sheet-supply cassette comprising:

a guide that guides edges of sheets housed in the sheet-supply cassette, the guide being movable to change position in accordance with size of housed sheets;

a cam abutment portion that moves to a position that corresponds to the position of the guide;

a cam with a cam surface, the cam being moved away from the cam abutment portion during an uninserted condition

until the cam surface is separated from the cam abutment portion and toward the cam abutment portion during insertion until the cam surface abuts the cam abutment portion, the cam surface having a shape that varies movement amount of the cam into abutment with the abutment portion during insertion in accordance with the position of the guide; and
a detected portion that moves in a linked manner with the cam.

51. A sheet-supply cassette adapted for insertion into a sheet-supply device body, the sheet-supply cassette comprising:

a guide that guides edges of sheets housed in the sheet-supply cassette, the guide being movable to change position in accordance with size of housed sheets;

a cam that moves to a position that corresponds to the position of the guide, the cam having a cam surface;

a cam abutment portion that is moved away from the cam surface during an uninserted condition until the cam abutment portion is separated from the cam surface and toward the cam surface during insertion until the cam abutment portion abuts the cam surface; and

a detected portion that moves in a linked manner with the cam, wherein the cam surface has a shape that varies movement amount of the cam abutment portion into abutment with the cam surface during insertion in accordance with the

position of the guide.